

03/05/14 Agenda - Period 4

- Answer Keys
- Warm Up
- Review Homework
 - Worksheet 7.1 day 1 - Zero & Negative Exponents
- Section 7.1 day 2 - Zero/Negative Exponents
- Homework
 - Worksheet 7.1 day 2 - Negative & Zero Exponents

Warm Up



Put your name on a slip of paper.

Simplify:

$$6^{-1} = \frac{1}{6} = \frac{1}{6} \quad 13^0 = 1$$

$$\begin{aligned} -3x^{-3} \\ = \frac{-3}{x^3} \end{aligned}$$

$$\frac{5a^{-4}}{2c} = \frac{5}{2a^4c}$$

$$\frac{10}{10} = 1$$

$$\frac{x^3}{x^3} = \frac{\cancel{x} \cdot \cancel{x} \cdot \cancel{x}}{\cancel{x} \cdot \cancel{x} \cdot \cancel{x}} = \frac{1}{1} = 1$$

$$x^{3-3} = x^0 = 1$$

$$a^0 = 1$$

$$a^{-n} = \frac{1}{a^n} \quad \frac{1}{a^{-n}} = a^n$$

EXPONENT	3	2	1	0	-1	-2	-3
2^n	8	4	2	1	$\frac{1}{2}$	$\frac{1}{4} = \frac{1}{2^2}$	$\frac{1}{8} = \frac{1}{2^3}$
3^n	27	9	3	1	$\frac{1}{3}$	$\frac{1}{9}$	$\frac{1}{27}$
4^n	64	16	4	1	$\frac{1}{4}$	$\frac{1}{16}$	$\frac{1}{64} = \frac{1}{4^3}$
5^n	125	25	5	1	$\frac{1}{5}$	$\frac{1}{25}$	$\frac{1}{125}$

$$n^2 \cdot n^3 \cdot n^1 = n^? = n^6$$

$$a^0 = 1$$

$$a^{-n} = \frac{1}{a^n} \quad \left(\frac{1}{a^{-n}} = a^n \right)$$

Goal: Be able to apply properties of zero and negative exponents.

Review:

$$a^m a^n = a^{m+n} \quad \frac{a^m}{a^n} = a^{m-n}$$

$$(a^m)^n = a^{mn}$$

$$(ab)^m = a^m b^m \quad \left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$$

$$a^0 = 1 \quad a^{-n} = \frac{1}{a^n} \quad \frac{1}{a^{-n}} = a^n$$

Evaluate each expression for:

$$m = 2, \quad t = -3, \quad w = 4, \quad \text{and} \quad z = 0$$

$$t^m = (-3)^2 = 9$$

$$t^{-m} = (-3)^{-2} = \frac{1}{(-3)^2} = \frac{1}{9}$$

$$(w \cdot t)^m = (4 \cdot (-3))^2 = (-12)^2 = 144$$

$$(w^z)^m = (4^0)^2 = (1)^2 = 1$$

$$z^{-t} (m^t)^z = 0^{-(-3)} \cdot (2^{-3})^0 = 0^3 \cdot 1 = 0$$

$$w^{-t} t^t = 4^{-(-3)} \cdot (-3)^{-3} = 4^3 \cdot (-3)^{-3} = \frac{4^3}{(-3)^3} = \frac{64}{-27}$$

$$\begin{aligned} m &= 2 \\ t &= -3 \\ w &= 4 \\ z &= 0 \end{aligned}$$

$$\left(\frac{t^w}{m^t}\right)^z = 1$$

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$$\frac{(2x^4y^2)^3}{2yx^3} \rightarrow \frac{2^3x^{12}y^6}{2yx^3}$$

$$2^{3-1}x^{12-3}y^{6-1}$$

$$2^2x^9y^5 = 4x^9y^5$$